EXECUTIVE SUMMARY

On August 31, 2000, Triton Coal Company, LLC (Triton) filed an application with the Bureau of Land Management (BLM) for federal coal reserves in a tract located to the north and west, and adjacent to Triton's Buckskin Mine in Campbell County, Wyoming (figures ES-1 and ES-2). This coal lease application was assigned case number WYW151634, and is referred to as the West Hay Creek (WHC) LBA tract. As applied for, the West Hay Creek LBA tract includes approximately 840 acres and an estimated 145 million tons of in-place federal coal reserves. The lands applied for in this application are located in northern Campbell County, Wyoming, approximately 12 miles north of the City of Gillette, Wyoming.

This lease application was reviewed by the BLM, Wyoming State Office, Division of Mineral and Lands Authorization, and it was determined that the application and the lands involved met the requirements of the regulations governing coal leasing on application at Title 43 of the Code of Federal Regulations Part 3425.1 (43 CFR 3425.1). The PRRCT reviewed this lease application at a public meeting held on October 25, 2000, in Cheyenne, Wyoming. At that meeting, the PRRCT recommended that the BLM continue to process the lease application.

In order to process an LBA, the BLM must evaluate the quantity, quality, maximum economic recovery, and fair market value of the federal coal and fulfill the requirements of the National Environmental Policy Act (NEPA) by evaluating the environmental consequences of leasing the federal coal.

To evaluate the environmental impacts of leasing and mining the coal, the BLM must prepare an EA or an EIS to evaluate the site-specific and cumulative environmental and socioeconomic impacts of leasing and developing the federal coal in the application area. The BLM made a decision to prepare an EIS for this lease application.

The US Environmental Protection Agency (EPA) will publish a notice announcing the availability of the DEIS in the *Federal Register.* BLM will publish a Notice of Availability and Notice of Public Hearing in the *Federal Register*. A 60-day comment period on the DEIS will commence with publication of the EPA's Notice of Availability. The BLM's *Federal Register* notice will be used to solicit public comments on the DEIS and on the fair market value, the maximum economic recovery, and the proposed competitive sale of coal from the LBA tract. A formal public hearing will be held during the 60-day comment period. All comments received on the draft EIS will be included, with responses, in the final EIS.

Figure ES-1 General Location Map with Federal Coal Leases and LBAs
(figure 1-1)

Figure ES-2 General Analysis Area
(figure 2-1)

BLM will use the analysis in this EIS to decide whether or not to hold a public, competitive, sealed-bid coal lease sale for the federal coal tract and issue a federal coal lease. Bidding at a potential sale would be open to any qualified bidder; it would not be limited to the applicant. If a lease sale is held, a federal coal lease would be issued to the highest bidder at the sale if a federal sale panel determined that the high bid at that sale meets or exceeds the fair market value of the coal as determined by BLM's economic evaluation, and if the US Department of Justice determines that there are no antitrust violations if a lease is issued to the high bidder at the sale.

Federal coal lease WYW150152 was issued to EOG Resources in exchange for federal coal lease WYW0322794, the Belco I-90 lease. This exchange was authorized by the I-90 Exchange Act of 1978. The lease acquired by EOG Resources as a result of this exchange is adjacent to the Buckskin Mine. Triton acquired this lease from EOG Resources in 2000.

Other agencies, including the Office of Surface Mining and Reclamation (OSM), a cooperating agency on this EIS, will also use this analysis to make decisions related to leasing and mining the federal coal in this tract. The US Forest Service (FS) is not a cooperating agency on this EIS because there are no federal surface lands managed by the FS included in the West Hay Creek LBA tract.

A decision to lease the federal coal lands in this application would be in conformance with the BLM Resource Management Plan for the Buffalo Field Office. The West Hay Creek LBA tract is contiguous with the Buckskin Mine. The LBA sale process is, by law and regulation, an open, public, competitive sealed-bid process. If a lease sale is held for this LBA tract, the applicant (Triton) may not be the successful high bidder. The analysis in this EIS assumes that Triton would be the successful bidder on the West Hay Creek LBA tract if a sale were held, and that it would be mined as a maintenance tract for the Buckskin Mine.

The Proposed Action and three alternatives are analyzed in this DEIS.

Proposed Action

The Proposed Action is to hold a competitive coal lease sale and issue a maintenance lease to the successful bidder for the West Hay Creek LBA tract as applied for (figure ES-2). Under the Proposed Action, Triton currently estimates that average annual production would be 25 million tons per year, and the life of the existing mine would be extended by approximately 5 years, and employment would be about 225 persons. The proposed action includes 838.13 acres.

Alternative 1

Under this alternative, the LBA tract would not be leased, but the existing leases at the adjacent Buckskin Mine would be developed according to the existing approved mining plans. Under the No Action Alternative, the Buckskin Mine would mine its remaining leased coal reserves in approximately 12 years at an average annual production rate of 25 million tons per year and average employment would be 225 persons.

Alternative 2

Under Alternative 2, BLM would hold a competitive lease sale and issue a maintenance lease for a tract that is larger than the applied for configuration. BLM has identified 176.2 acres that are to the north and a small area in the southeast corner of the tract as applied for that could be added in order to maximize economic recovery and avoid bypassing potentially recoverable federal coal (figure ES-2). If all of these lands are added to the tract, this alternative would add about 25 million tons of unleased federal coal to the West Hay Creek LBA Tract as applied for. Under this alternative, production and employment would be similar to the Proposed Action.

Alternative 3

This alternative also considers holding a competitive coal lease sale and issuing a maintenance lease to the successful bidder for a reconfigured West Hay Creek LBA tract (figure ES-2). As part of the preliminary geologic analysis of the federal coal resources in and around the West Hay Creek LBA tract, the BLM identified approximately 5 million tons of unleased federal coal southeast of the West Hay Creek tract as applied for that would be isolated and might be bypassed if it is not included in the tract. This alternative adds 31.13 acres to the West Hay Creek tract as applied for. Production and employment would be similar to the Proposed Action.

Table ES-1 summarizes coal production, surface disturbance, and mine life for the Buckskin Mine under each alternative. The environmental impacts of mining the LBA tract would be similar under the Proposed Action and Alternatives 2 and 3.

TABLE ES-1
COMPARISON OF COAL PRODUCTION, SURFACE DISTURBANCE, AND MINE LIFE

Item	No Action Alternative (existing Buckskin Mine)	Added by Proposed Action	Added by Alternative 2	Added by Alternative 3
In-place[1] federal coal (as of 1/1/02)	512 mmt	145 mmt	170 mmt	150 mmt
Recoverable coal[2] (as of 1/1/02)	434 mmt	130 mmt	150 mmt	130 mmt
Coal mined[3], 12/31/01	189.9 mmt	---	—	---
Lease acres[4]	4,949 ac	838.13 ac	1,014.30 ac	869.26 ac
Total area to be disturbed[4]	5,099 ac	830 ac	990 ac	830 ac
Permit area[4]	7,602 ac	7,602 ac	7,842 ac	7,602 ac
Average annual post-2001 coal production	25 mmt	25 mmt	25 mmt	25 mmt
Remaining life of mine (post-2001)	12.4 yrs	17.6 yrs	18.4 yrs	17.6 yrs
Average no. of employees	225	0	0	0
Total projected state revenues (post-2001)[5]	$477 million	$143 million	$165 million	$143 million
Total projected federal revenues (post-2001)[6]	$165 million	$49 million	$57 million	$49 million

[1]In-place coal includes all Canyon and Anderson coal within the lease area.

[2]Buckskin Mine defines recoverable coal as an estimate of the extractable coal that can be recovered. Excludes all mining losses that occur during normal mining operations, including wedge losses, coal left in pillars and fenders, and top and bottom coal cleaning.

[3]Assumes 90% to 92% recovery of extractable coal.

[4]Lease area includes Federal coal leases only and does not include state and private coal within the permit boundary. The permit area is larger than leased or disturbed areas to assure that all disturbed lands are within the permit boundary and to allow an easily defined legal land description. For the Proposed Action and Alternative 3, the permit area would not need to be changed. For Alternative 2, approximately 240 acres along the northern perimeter would need to be added.

[5]Projected revenue to the state of Wyoming is $1.10 per ton of coal sold and includes income from severance tax, property and production taxes, sales and use taxes, and Wyoming's share of federal royalty payments (University of Wyoming 1994).

[6]Federal revenues based on $4.00 per ton price x federal royalty of 12.5% x amount of recoverable coal plus bonus payment on LBA coal of $0.26 per ton based on average of last 11 LBAs (table 1-1) x amount of recoverable coal less state's 50% share.

Other alternatives that were considered but not analyzed in detail include holding a competitive coal lease sale and issuing a lease to the successful bidder (not the applicant) for the purpose of developing a new stand-alone mine, and delaying the sale of the West Hay Creek LBA tract as applied for to increase the benefit to the public afforded by higher coal prices and/or to allow more complete recovery of the potential CBM resources in the tract prior to mining.

Critical elements of the human environment (BLM 1988) that could be affected by the proposed project include air quality, cultural resources, Native American religious concerns, threatened, endangered (T&E), and candidate plant and animal species, hazardous or solid wastes, water quality, wetlands/riparian zones, environmental justice, and invasive nonnative species. Five critical elements (areas of critical environmental concern, prime and unique farmland, wild and scenic rivers, floodplains, and wilderness) are not present in the project area and are not addressed further. In addition to the critical elements that are potentially present in the project area, the EIS discusses the status and potential effects of the project on topography and physiography, geology and mineral resources, soils, water availability and quality, alluvial valley floors, vegetation, wildlife, land use and recreation, paleontological resources, visual resources, noise, transportation resources, and socioeconomics.

The project area is located in the Powder River Basin (PRB), a part of the Northern Great Plains that includes most of northeastern Wyoming. The West Hay Creek LBA tract is located in the north-central part of the PRB. The WHC LBA tract is in an area consisting primarily of elevated ridges broken by minor drainages with an elevation ranging from 4,100 to 4,340 feet. In the LBA tract, there are two mineable coal seams, referred to as the Anderson and the Canyon coal seams. The Anderson coal seam averages 40 feet thick and the underlying Canyon seam averages 66 feet. The parting thickness between the Anderson and Canyon coal seams averages about 15 feet in the tract. The average overburden thickness is about 204 ft.

The existing topography on the LBA tract would be substantially changed during mining. A highwall with a vertical height equal to overburden plus coal thickness would exist in the active pits. Following reclamation, the average surface elevation would be lower due to removal of the coal. The reclaimed land surface would approximate premining contours and the basic drainage network would be retained, but the reclaimed surface would contain fewer, gentler topographic features. This could contribute to reduced habitat diversity and wildlife carrying capacity on the LBA tract. These topographic changes would not conflict with regional land use, and the postmining topography would adequately support anticipated land use.

The geology from the base of the coal to the land surface would be subject to considerable long-term change on the LBA tract under any alternative. An average of 204 feet of overburden, 18 feet of interburden and 106 feet of coal would be removed from the LBA tract. The replaced overburden would be a relatively homogeneous mixture compared to the premining layered overburden. Development of other minerals potentially present on the LBA tract could not occur during mining but could occur after

mining. Conventional oil and gas wells would have to be plugged and abandoned during mining but could be recompleted after mining if the remaining reserves justify the expense of the recompletion. There are no conventional oil and gas wells within the LBA tract. Therefore, options such as plugging during mining and reestablishing after mining or establishing a value for the remaining reserves are not an issue at this time. CBM resources associated with the coal that are not recovered prior to mining would be vented to the atmosphere and irretrievably lost when the coal is removed. Seven CBM wells were completed on the LBA tract as of October 28, 2002 that were capable of production, and there are 15 remaining undrilled 40-acre spacing units on the LBA tract. CBM could be produced from the existing wells, and other wells could be drilled during the time it takes to lease and permit the LBA tract and, on a case by case basis, until mining activity approaches each well. BLM's policy is to optimize recovery of both resources, ensure the public receives a reasonable return, and encourage agreements between lessees or use BLM authority to minimize loss of publicly owned resources.

Consequences to soil resources from mining the LBA tract would include changes in the physical, biological, and chemical properties. Following reclamation, the soils would be unlike premining soils in texture, structure, color, accumulation of clays, organic matter, microbial populations, and chemical composition. The replaced topsoil would be much more uniform in type, thickness, and texture. It would be adequate in quantity and quality to support planned postmining land uses (wildlife habitat and rangeland).

Moderately adverse short-term impacts to air quality would be extended onto the West Hay Creek LBA tract during the time it is mined if a lease is issued. Dust would be visible to the public when mining occurs near Wyoming 14-16, Collins Road, or McGee Road. Total suspended particulate (TSP) concentrations would be elevated in the vicinity of mining operations on the LBA tract. The increase in TSP concentrations would not violate federal or Wyoming primary and secondary standards outside the mine's permit boundary, even with increased production and when emissions from adjacent mines are considered. Concentrations of gaseous emissions would remain within acceptable federal and state standards.

There is public concern over the releases of NOx from overburden blasting prior to coal removal. Low-lying, gaseous orange clouds containing NOx that can be transported by wind have formed after overburden blasting. Exposure to NOx can cause adverse health effects. EPA has expressed concerns that NOx levels in some blasting clouds may be sufficiently high at times to cause human health effects. As a result of these incidents, the Wyoming Department of Environmental Quality (WDEQ) has directed some mines to take steps designed to mitigate the effects of NO_2 emissions occurring from overburden blasting.

To date, none of the incidents of concern have occurred at the Buckskin Mine. There have been no complaints to the mine or the WDEQ about blasting clouds produced from the mine. Based on the size and nature of their blasting, the WDEQ has not directed the Buckskin Mine to take any of these steps to mitigate or prevent blasting clouds.

Changes in runoff characteristics and sediment discharges would occur during mining of the LBA tract, and erosion rates could reach high values on the disturbed areas because of vegetation removal. However, state and federal regulations require that surface runoff from mined lands be treated to meet effluent standards, so sediment would be deposited in ponds or other sediment-control devices. After mining and reclamation are complete, surface water flow, quality, and sediment discharge would approximate premining conditions.

Mining the LBA tract would increase the areal extent of water levels in the coal and overburden aquifers and the area where the existing coal and overburden aquifers would be replaced by mine backfill. Drawdown in the continuous coal aquifer would be expected to increase roughly in proportion to the increase in area affected by mining and would extend farther than drawdown in the discontinuous overburden aquifers. The data available indicate that hydraulic properties of the backfill would be comparable to the premining overburden and coal aquifers. Total dissolved solids levels in the backfill could initially be expected to be higher than in the premining overburden and coal aquifers, but would be expected to meet Wyoming Class III standards for use as stock water.

Based on preliminary alluvial valley floor (AVF) determinations, it is unlikely that any portions of the LBA tract meet the criteria to be AVFs significant to agriculture. AVFs that are not significant to agriculture can be disturbed during mining but must be restored as part of the reclamation process. Jurisdictional wetlands that are disturbed by mining must be replaced during the reclamation process.

A total of 17.51 acres of jurisdictional wetlands comprised of 9.82 acres of riverine-emergent marsh and 7.69 acres of riverine-wet meadow were identified within the analyses area. Existing wetlands located in the LBA tract would be destroyed by mining operations. Jurisdictional wetlands that are disturbed by mining must be replaced during the reclamation process.

Mining would progressively remove the native vegetation on the LBA tract. Reclamation and revegetation of this land would occur contemporaneously with mining. Reestablished vegetation would be dominated by species mandated in the reclamation seed mixtures, which are approved by the WDEQ. The majority of these species would be native to the LBA tract. Initially, the reclaimed land would be dominated by grassland vegetation, which would be less diverse than the premining vegetation. Estimates for the time it would take to restore sagebrush to premining density levels range from 20 to 100 years. An indirect impact associated with this vegetative change would potentially be a decreased big game habitat carrying capacity. However, a diverse, productive, and permanent vegetative cover would be established on the LBA tract within about 10 years following reclamation, prior to release of the final reclamation bond. The decrease in plant diversity would not seriously affect the potential productivity of the reclaimed areas, and the proposed postmining land uses (wildlife habitat and rangeland) should be achieved even with the changes in vegetation composition and diversity. The reclamation plans for the LBA tract would also include

steps to control invasion by weedy (invasive, nonnative) plant species. The surface on the West Hay Creek LBA tract is owned entirely by Triton.

Surveys have been conducted to determine the presence of potential habitat for T&E or candidate plant species, but no suitable habitat has been found on the West Hay Creek LBA tract. In the short term, wildlife would be displaced from the LBA tract in areas of active mining and the acreage of habitat available for wildlife populations would be reduced. However, the LBA tract does not contain any unique or crucial big game habitat, and habitat would be disturbed in parcels, with reclamation progressing as new disturbance occurs. In the long term, following reclamation, carrying capacity and habitat diversity may be reduced due to flatter topography, less diverse vegetative cover, and reduction in sagebrush density.

T&E wildlife surveys specific to the proposed lease tract were conducted in 1999. No T&E species or potential habitat was found on the tract for the bald eagle, black-footed ferret, or mountain plover during those surveys. There have been no sitings of swift foxes on the LBA tract or adjacent lands, and there are no prairie dog colonies on the tract.

Active mining would preclude other land uses. Recreational use of the LBA tract would be severely limited during mining; however, there is no public surface included in the tract. Within 10 years after initiation of each reclamation phase, rangeland and wildlife use would return to near premining levels. The cumulative impacts of energy development (coal mining, oil, and gas) in the PRB are and will continue to contribute to a reduction in hunting opportunities for some animals (pronghorn, mule deer, and sage grouse).

Mining would also impact oil and gas development on the leased lands during active mining. The federal oil and gas rights are leased. As discussed above, there are active CBM wells on the tract under the Proposed Action and Alternatives 2 and 3. CBM that is not recovered prior to mining would be vented and irretrievably lost as the coal is removed.

Cultural resources surveys have been conducted on the West Hay Creek tract LBA area. One site was identified and mitigated in concurrence with Wyoming SHPO. No other cultural resources sites were identified.

No sites of Native American religious or cultural importance have been identified on the LBA tract. If such sites or localities are identified at a later date, appropriate action must be taken to address concerns related to those sites.

No unique or significant paleontological resources have been identified on the West Hay Creek LBA Tract, and the likelihood of encountering significant paleontological resources is small.

Mining activities at the existing Buckskin Mine are currently visible from Collins Road and McGee Road and Wyoming 14-16, and mining activities on the West Hay Creek LBA tract would also be visible from these roads. Mining would affect landscapes classified by BLM as VRM Class IV, and the landscape character would not be significantly changed following reclamation. No unique visual resources have been identified on or near the LBA tract.

Impacts from noise generated by mining activities on the LBA tract are not expected to be significant due to the remote nature of the site. No new or reconstructed coal transportation facilities would be required under the Proposed Action or Alternatives 2 or 3. Leasing the LBA tract would extend the length of time that coal is shipped from the permitted Buckskin Mine. Active pipelines and utility lines would have to be relocated in accordance with previous agreements, or agreements would have to be negotiated for their removal or relocation.

Royalty and bonus payments for the coal in the LBA tract would be collected by the federal government and split with the state. A 1994 University of Wyoming study estimated that the total direct fiscal benefit to the State of Wyoming from coal mining taxes and royalties is $1.10/ton of coal mined. Using that estimate, mining the coal in the West Hay Creek LBA Tract under the action alternatives would provide a tax and royalty benefit to the State of Wyoming of $65 to $75 million, expressed in current dollars. Mine life, and thus employment, would be extended roughly 5 years at the Buckskin Mine, and Triton projects that employment at the mine would remain at 225 persons.

With regard to environmental justice issues, it was determined that potentially adverse impacts do not disproportionately affect minorities, low-income groups, or Native American tribes or groups. No tribal lands or Native American communities are included in this area, and no Native American treaty rights or Native American trust resources are known to exist for this area.

Under the No Action Alternative, the coal lease application would be rejected; the area contained in the application would not be offered for lease at this time. The tract could be nominated for lease again in the future. Under the No Action Alternative, the impacts described in the preceding paragraphs to topography and physiology, geology and minerals, soils, air quality, water resources, alluvial valley floors, wetlands, vegetation, wildlife, threatened, endangered and candidate species, land use and recreation, cultural resources, Native American concerns, paleontological resources, visual resources, noise, transportation, and socioeconomics would occur on the existing Buckskin coal leases. These impacts would not be extended onto the LBA tract. Portions of the West Hay Creek Ranch LBA tTract adjacent to the existing Buckskin Mine would be disturbed to recover the coal in the existing leases.

If impacts are identified during the leasing process that are not mitigated by existing required mitigation measures, BLM can include additional mitigation measures, in the form of stipulations on the new lease, within the limits of its regulatory authority. BLM

has not identified additional special stipulations that should be added to the BLM lease or areas where additional or increased monitoring measures are recommended.

Cumulative impacts result from the incremental impacts of an action added to other past, present, and reasonably foreseeable future actions, regardless of who is responsible for such actions. Cumulative impacts can result from individually minor, but collectively significant, actions occurring over time.

Since decertification of the Powder River Federal Coal Region in 1990, the BLM Wyoming State Office has issued 11 new federal coal leases containing approximately 2.806 billion tons of coal using the LBA process. This leasing process has undergone the scrutiny of two appeals to the Interior Board of Land Appeals and one audit by the General Accounting Office.

Nine additional coal lease applications, including the West Hay Creek application, are currently pending. The pending LBA applications contain approximately 2.3 billion tons of coal.

Four regional EISs evaluating surface coal development in the PRB in Wyoming were previously prepared. They are:

- *Final Environmental Impact Statement, Eastern Powder River Coal Basin of Wyoming*, BLM, October 1974;

- *Final Environmental Impact Statement, Eastern Powder River Coal*, BLM, March 1979;

- *Final Environmental Impact Statement, Powder River Coal Region*, BLM, December 1981;

- *Draft Environmental Impact Statement, Round II Coal Lease Sale, Powder River Region*, BLM, January 1984.

Since 1989, coal production in the Powder River Basin has increased by approximately 6.8% per year. The increasing state production is primarily due to increasing sales of low-sulfur, low-cost PRB coal to electric utilities that must comply with Phase I requirements of Title III of the 1990 Clean Air Act Amendments. Electric utilities account for 97% of Wyoming's coal sales.

Oil production has decreased in the Wyoming PRB since 1990, but natural gas production has been increasing, particularly in Campbell County. This is due to the development of shallow CBM resources west of the coal mines. CBM exploration and production are currently ongoing throughout the Wyoming PRB. Since the early 1990s, BLM has completed numerous environmental assessments (EAs) and EISs analyzing CBM projects. The latest of these is the *Final Environmental Impact Statement and Draft Planning Amendment for the Powder River Basin Oil and Gas Project*, which was

completed in January 2003. The project area for this EIS includes almost eight million acres of mixed federal, state, and private lands within the Wyoming portion of the PRB. The EIS evaluates the impacts of drilling, completing, operating, and reclaiming almost 39,400 new federal, state, and private CBM wells in addition to the roughly 12,100 federal, state, and private CBM wells already drilled or permitted within the project area.

The EIS also analyzes the impacts of developing 3,200 new conventional oil and gas wells, as well as constructing, operating, and reclaiming various ancillary facilities needed to support the new CBM and conventional wells, including roads, pipelines for gathering gas and produced water, electrical utilities, and compressors. Under the current process for approving CBM drilling, CBM wells can be drilled on private and state oil and gas leases after approval by the Wyoming Oil and Gas Conservation Commission (WOGCC) and the Wyoming State Engineer's Office (SEO). On federal oil and gas leases, BLM must analyze the individual and cumulative environmental impacts of all drilling, as required by NEPA, before CBM drilling can be authorized. CBM wells have been drilled in or around the West Hay Creek LBA tract. CBM drilling and production are expected to continue in the areas around the coal mines and on the LBAs. Due to the proximity of the coal mining and CBM production operations, cumulative impacts to groundwater, surface water, air quality, and wildlife have occurred and are likely to continue as more CBM resources are developed adjacent to existing surface coal mines.

Other mineral development levels in the Wyoming PRB are currently lower than predicted in the regional coal EISs. In the 1970s, significant uranium development was anticipated in southwest Campbell County and northwest Converse County. This development did not materialize because the price of uranium dropped in the early 1980s. There are currently two *in situ* uranium operations in Converse and Johnson counties, but no mines and no mills. Wyoming uranium production is expected to decrease this year.

In addition to the ongoing coal mining and leasing and the CBM development, other projects planned in the vicinity of the northern mine group include the construction of the Wygen II coal-fired power plant which has been proposed at the Black Hills Corporation energy complex near the Wyodak Mine site. The power plant could be expected to have overlapping impacts with the impacts of mining the West Hay Creek LBA tract.

Most of the other projects planned in the PRB are located some distance south of the LBA tract near the middle and southern portion of the basin. These include the construction and operation of the North American Power Group's Two Elk and Two Elk Unit 2 power plants east of the Black Thunder Mine; construction and operation by North American Power Group of a 500-megawatt coal fired power plant at the Cordero Rojo Complex; and construction and use of the proposed DM&E rail line. One project, the ENCOAL facility, which at one time was scheduled for construction at the North Rochelle Mine, has been indefinitely delayed. The impacts of mining the West Hay Creek LBA tract would not be expected to overlap with the impacts of building and operating these projects. The existing and proposed development in the PRB has and

will continue to result in the introduction of additional roads, railroads, power lines, fences, oil and gas production equipment and mine structures. This area has already undergone change from a semi-agriculturally based economy to a coal mining and oil and gas economy.

Environmentally, the open, basically treeless landscape has been visibly altered by construction, equipment, and human activities. Leasing the LBA tract would increase the total area that would be affected by mining but would not cause a significant cumulative change in daily impacts because it is an extension of an ongoing operation, and mining disturbance is progressive with reclamation proceeding contemporaneously.

Cumulative impacts vary by resource and range from being almost undetectable to being substantial. Cumulative impacts on air quality, groundwater quantity and wildlife habitat have created the greatest concern.

An air quality impact assessment predicting potential far-field cumulative air quality impacts, using the EPA CALMET/CALPUFF dispersion modeling system, has been prepared to predict maximum potential air quality impacts at mandatory federal PSD Class I areas downwind of proposed oil and gas development in the PRB in northeast Wyoming and southeast Montana. The assessment considered potential air pollutant emission sources from proposed CBM development in Wyoming and Montana combined with other reasonably foreseeable development (RFD) emission sources to predict the total potential cumulative impact to air quality. Surface coal mining operations in Montana and Wyoming were included as other RFD emission sources in this assessment.

The cumulative far-field impacts predicted in the air quality impact assessment would be the same under the Proposed Action and all of the alternatives for leasing or not leasing federal coal considered in the West Hay Creek LBA tract because it is a maintenance tract which would be leased to extend operations at the existing Buckskin mine. Selection of the Proposed Action or Alternatives 2 or 3 would not introduce new sources of impacts to air quality, but would change the location of the sources of those impacts to the newly leased tracts and would extend the period of time that those existing sources would be in operation. Selection of the No Action alternative (Alternative 1) would not affect the currently approved mining operations at Buckskin Mine existing leases. Table ES-2 presents the maximum predicted air pollutant concentrations at specified PSD Class I areas.

TABLE ES-2
MAXIMUM PREDICTED PSD CLASS I AREA
CUMULATIVE FAR-FIELD IMPACTS UNDER WYOMING PRB OIL AND GAS PROJECT EIS ALTERNATIVE 1 (PROPOSED ACTION) AND ALL WEST HAY CREEK LEASE APPLICATION EIS ALTERNATIVES

Pollutant	Averaging Period	Class I Area	Maximum Modeled Concentration (cumulative)	PSD Class I Increment
Nitrogen dioxide	Annual	Northern Cheyenne Reservation	4.2	2.5
PM_{10}	24-hour	Northern Cheyenne Reservation	12.8	8
	Annual	Northern Cheyenne Reservation	1.7	4
Sulfur dioxide	3-hour	Northern Cheyenne Reservation	5.1	25
	24-hour	Absaroka-Beartooth Wilderness	2.4	5
	Annual	Northern Cheyenne Reservation	0.3	2

Source: Argonne 2002

Table ES-3 summarizes the range of impacts as the annual average number of days over the 11-year periods predicted to equal or exceed a 1.0 dv “just noticeable change”

TABLE ES-3
PREDICTED VISIBILITY IMPACTS IN CLASS I AREAS – DAILY FLAG-REFINED METHOD

(average number of days per year predicted to equal or exceed a 1.0 dv "just noticeable change")

Class I Area	Alt 1	Alt 2A	Alt 2B	Alt 3	Nonproject Sources	Cumulative Sources
Badlands Wilderness Area[1]	3	3	1	0	13 to 17	18 to 28
Bridger Wilderness Area	4	4	3	1	7 to 9	8 to 12
Fitzpatrick Wilderness Area	4	3	3	1	6 to 9	8 to 12
Gates of the Mtns Wilderness Area	0	0	0	0	3 to 4	3 to 4
Grand Teton National Park	1	1	0	0	3 to 5	4 to 8
North Absaroka Wilderness Area	4	3	2	0	9 to 13	11 to 15
Red Rock Lakes Wilderness Area	0	0	0	0	0 to 1	0 to 3
Scapegoat Wilderness Area	0	0	0	0	2 to 2	2 to 3
Teton Wilderness Area	3	3	2	0	6 to 9	7 to 11
Theodore Roosevelt NMP[2] (North Unit)	0	0	0	0	1 to 1	1 to 3
Theodore Roosevelt NMP[2] (South Unit)	1	0	0	0	1 to 3	2 to 7
U.L. Bend Wilderness Area	1	1	1	0	4 to 5	5 to 8
Washakie Wilderness Area	5	4	4	1	10 to 14	12 to 18
Wind Cave National Park	4	3	2	0	17 to 21	22 to 28
Yellowstone National Park	3	2	1	0	8 to 11	9 to 13
Northern Cheyenne Reservation[3]	17	16	14	7	27 to 82	33 to 92

Note: Results shown are the predicted impacts under Wyoming PRB Oil and Gas Project Alternatives 1, 2A, 2B, and 3; impacts related to coal mining under all West Hay Creek lease application EIS (alternatives are included Under "Non-Project Sources")

[1]Congress designated the wilderness area portion of Badlands National Park as a mandatory federal PSD Class I area. The remainder of Badlands National Park is a PSD Class II area.
[2]NMP - National memorial park.
[3]Although the Northern Cheyenne Reservation is a tribal designated PSD Class I area, it is not a mandatory federal PSD Class I area subject to EPA's regional haze regulations.

Nonproject Sources – The impact of all air pollutant emission sources not included in Wyoming PRB Oil and Gas Project EIS Alt 1, Alt 2A, Alt 2B or Alt 3, including existing surface coal mines in Wyoming and Montana and the Montana Statewide EIS sources. The range of potential annual average days above a 1.0 dv "just noticeable change" in visibility corresponds to including Montana Alternative A (low) to Montana Alternative B/C/E (high).

Cumulative Sources – The impact of all cumulative air pollutant emission sources combined, including Wyoming PRB Oil and Gas Project EIS Alt 1, Alt 2A, Alt 2B, Alt 3, and nonproject sources (which include the West Hay Creek Lease Application EIS Proposed Action and alternatives and Montana Statewide EIS sources). The range of potential annual average days above a 1.0 dv "just noticeable change" in visibility corresponds to: including nonproject, Wyoming Alternative 3 and Montana Alternative A sources (low); up to including nonproject, Wyoming Alternative 1 and Montana Alternative B/C/E sources (high).

Source: Argonne 2002

Coal mines develop predictive models to assess the potential air quality impacts of their mining operations. The predictive modeling conducted for PRB mines indicates that mining operations do not have significant offsite particulate pollution impacts, even when production and pollution from neighboring mines are considered. This modeling is based on the assumption that mining activities are sufficiently removed from the permit boundaries and that neighboring mines are not actively mining in the immediate vicinity (within 0.6 to 2.5 miles).

Figure ES-3 shows modeled and extrapolated worst-case coal aquifer drawdown as a result of mining at the northern group of mines. Monitoring of backfill areas indicates that reclaimed areas are being recharged with water generally suitable for livestock use (the premining use).

Wildlife habitat quality has declined in the PRB due to a continuing trend of landscape fragmentation from roads, rail lines, oil and gas wells, coal mines, and fences. Mining the LBA tract would add to this habitat fragmentation. Wildlife monitoring indicates that wildlife are using reclaimed areas.

This draft EIS presents the BLM's analysis of environmental impacts under authority of the NEPA and associated rules and guidelines. The BLM will use this analysis to make a leasing decision. The decision to lease these lands is a necessary requisite for mining but is not in itself the enabling action that will allow mining. The most detailed analysis prior to mine development would occur after the lease is issued, when the lessee files an application for a surface mining permit and mining plan approval, supported by extensive proposed mining and reclamation plans, to the WDEQ.

Figure ES-3 Modeled and Extrapolated Worst-case Coal Aquifer Drawdown Scenarios Showing Extent of Actual 15-yr Drawdowns and USGS Predicted Cumulative Drawdowns
(figure 4-3)